GEOGRAPHIC SCHOOL BULLETINS

OF THE NATIONAL GEOGRAPHIC SOCIETY, WASHINGTON 6, D.C.

DECEMBER 5, 1955 VOL. XXXIV, NO. 10

New Guinea: Dark Mystery and High Adventure

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NEW GUINEA CHIEFTAIN WEARS "WHITE TIE AND TAILS"—Flaming Red Tail-feathers of the Greater Bird of Paradise Bedeck This Grizzled Hillman. In Childhood His Nose Was Pierced and Kept from Healing So He Could Display Ornaments

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through vast swamplands and ragged mountains near the island's center. Drums beat out the news along the winding stream. Among village houses, thatched and stilted, dark-skinned natives paused to listen.

"A white man comes up the river," the drums said. "He brings his 'Mary.' They come to hunt birds."

The drums had only part of the story. Gilliard was certainly out to collect some of the strange, bright species that flick through New Guinea's dank forests. But he also intended to level his cameras at the natives themselves—Stone Age tribesmen, their noses pierced by shells or bones. Their strange customs are slowly changing as the white man's ways follow the river boats of traders, prospectors, scientists.

Gilliard and his "Mary" (wife) visited jungle-locked villages along the Sepik. They lived among fierce and impassive savages who still flourish tufted tassels that tell of the lives they have taken. These former head-hunters used to boast, "A man who has not killed is nothing."

The white couple found long village "spirit houses" adorned with the carved artistry of superstitious craftsmen. They saw human skulls, fleshed with clay, used as decorations. Far up the Sepik they ventured into Telefolmin, where feuding natives had massacred two Australian patrol officers only weeks before.

In the breathless evenings, deep in the jungle, they took refuge in cots to escape famished hordes of mosquitoes that blackened the outside of the netting. Once a crocodile thrashed to within 20 feet of Gilliard's tent. Twice he awoke in time to see the threatening figure of a man with an ax standing just outside, outlined by heat lightning.

Gilliard's odyssey of adventure, the brilliant pictures he brought back, make a thrilling story, "To the Land of the Head-hunters," in October's *National Geographic Magazine*.

Others have ventured deep into tortuous valleys of this eerie land. Bush pilots fly over much of it. Planters raise copra in coastal settlements. Mining men find rich gold deposits in moun-

ORCHESTRA ARRIVES FOR THE DANCE
In Hideous Masks and Bird of Paradise Plumage, They Carry Painted Ceremonial Drums with Heads of Stretched Python Skin

E. THOMAS GILLIARD AND HENRY KALTENTHALER, AMERICAN MUSEUM-ARMAND DENIS EXPEDITION

NED BLOOD FROM CAMERA KLIX

A NEW BUSINESS FOR OLD NEW GUINEA—Australian Sheep, Flown to the Upland Country in 1947, Thrive under the Watchful Eyes of Stone Age Shepherds

New Guinea: Dark Mystery and High Adventure

If the television quizmaster should ask what Irian is, many geography students would have trouble winning $64,000. It is the Indonesian name for western New Guinea.

Indonesians claim the territory as part of their island republic. But the Dutch, who have administered it since 1602, held on to it after turning over the Netherlands East Indies to Indonesia six years ago. The dispute faces the United Nations General Assembly.

A curious side to this controversy is that neither Dutch nor Indonesians know very much about New Guinea's resources, its people, their primitive cultures. The 1,500-mile-long island, second only to Greenland in size, has never been fully explored. One scientist-adventurer who has learned much about its dark interior is an American.

The National Geographic Society jointly sponsored the last expedition into New Guinea jungles by E. Thomas Gilliard, associate curator of birds for the American Museum of Natural History.

Mr. Gilliard's most recent trip took him up the Sepik River that loops

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NASH MEJANE

CIVILIZATION TOUCHES COASTAL NATIVES—Oddments of Clothing Are Proof of Contact with White Man's Ways. Long Canoes Have Pole Outriggers on Each Side

tain canyons. Dedicated missionaries carry their faith to tiny outposts.

Such men provide a patchwork of facts about this vulture-shaped island perched off Australia's northern coast. Great rivers—Sepik, Fly, Ramu—cut between saw-tooth peaks, past golden uplands of rank grass ten feet tall, and through almost interminable stagnant swamps. During World War II, Allied troops used the best maps available. Even so, great areas were unmarked except for the legend: "Very high mountains believed to be here." Stream courses were often vague dotted lines.

Today's maps have filled many white spaces, but details still are hazy. New Guinea's highest peak is either Mt. Wilhelm or Mt. Juliana. Both are over 15,000 feet. Small airstrips dot some valleys like stations on a commuter railroad, for aircraft offer the chief means of transportation within the island. But even planes cannot reach other remote glens, half hidden by mountain clouds, where pygmies till hillside gardens. There are still other valleys, almost certainly, which white men have never seen. Who knows what ancient cultures may thrive in such places—or what reserves of oil, gold, perhaps uranium, may lie under untouched jungles?

National Geographic References

Magazine—Oct., 1955, "To the Land of the Head-hunters" (school price 55¢)
April, 1953, "New Guinea's Rare Birds and Stone Age Men" (75¢)
Nov., 1951, "New Guinea's Paradise of Birds" (75¢)

School Bulletins—Nov. 22, 1954, "Stone Age Men Bridge a New Guinea River" (10¢); Mar. 15, 1954, "New Guinea's Kukukukus Keep Stone Age Alive" (10¢)

managed to put every one of their 11 men on the peak—an extraordinary achievement in the Himalayas where the usual "final assault team" consists of two men.

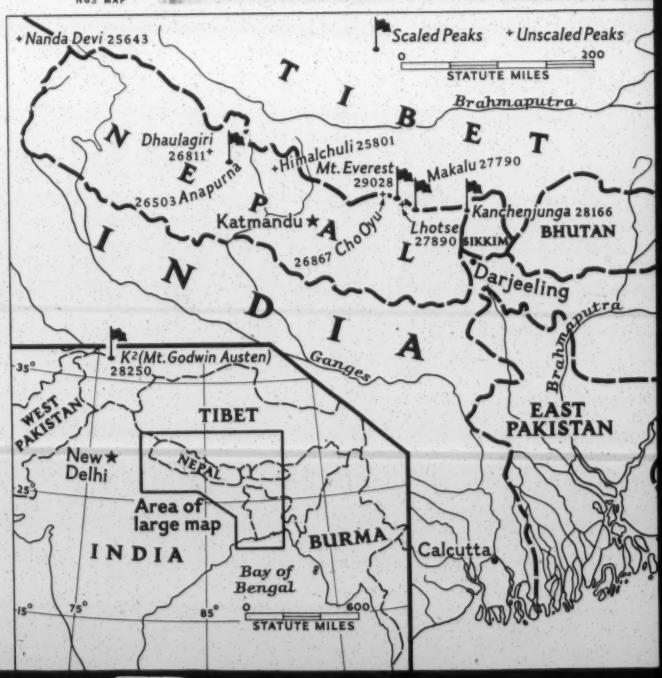
Ambitious alpinists should not lose hope at this list of triumphs. There are many more mountains whose wind-scoured crests, soaring about 25,000 feet, have never felt the stab of hobnails. Lhotse, the world's fourth-highest summit, turned back an international team led by a University of California professor. The attempt on this, Everest's south peak, was made in October when crusted snow slowed progress.

Meanwhile a Swiss-French party, including France's famed woman mountaineer, Mlle. Claude Kogan, failed to reach the top of Cho Oyu on the other side of Everest.

Dhaulagiri, 26,811 feet high, defeated a Swiss-German team at the 26,000-foot mark earlier this year. Two years ago, a Swiss team also failed. One member predicted that campsites on Dhaulagiri's precipitous slopes might have to be blasted out with dynamite before the great peak is finally beaten.

The assaults continue. Himalchuli reportedly foiled a British party this year. Nanda Devi is scheduled for an attack. A team from Argentina plans a new attempt on Dhaulagiri's summit, while a Swiss expedition has its eye on Lhotse.

NGS MAP



Like a rifle's front sight, Lhotse (top picture) rises between the flanks of Everest and Nuptse. Unscaled Lhotse is a prime target for people who conquer mountains—intrepid climbers with the courage, skill, determination, and equipment to chop hand and foot holds on bitter icy slopes (upper right), or backpack weighty supplies up insecure rope ladders (lower right).

Other long-sought mountaineering objectives appear on the map. Flags indicate high peaks that have felt the conqueror's tread. Crosses mark summits that no human has ever attained.

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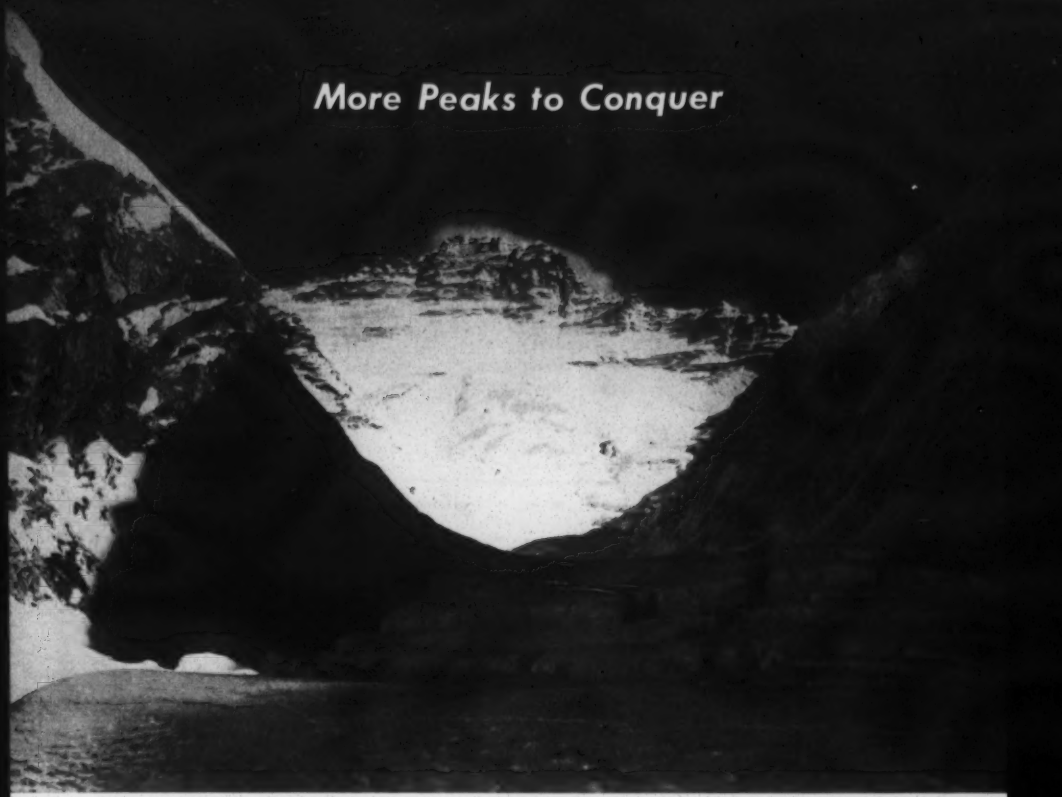
More Peaks to Conquer



NORMAN G. DYHRENFURTH; GEORGE LOWE (RIGHT);
© R.G.S. AND ALPINE CLUB (RIGHT, BELOW)

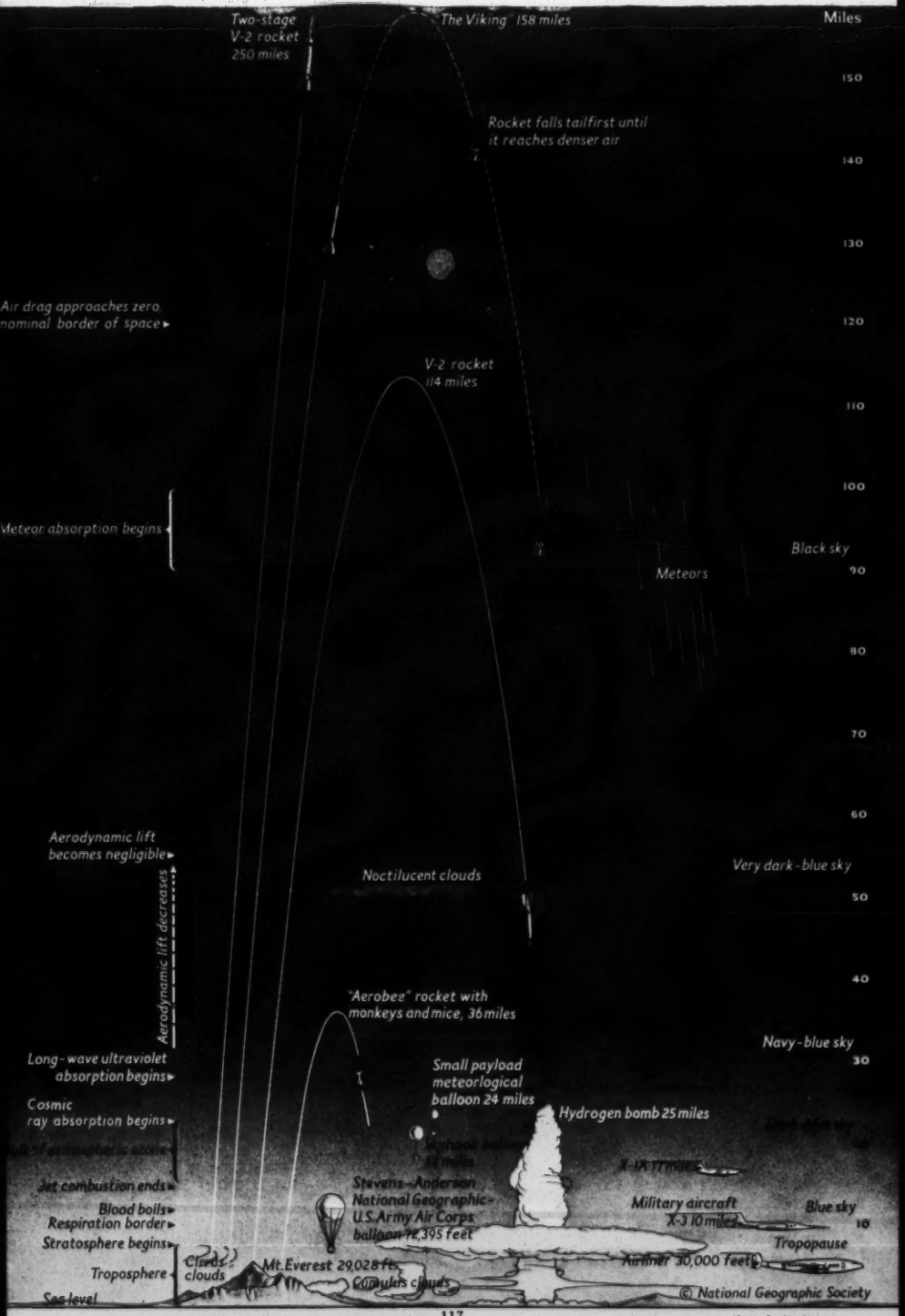
When Sir Edmund Hillary and Tenzing Norkey stood triumphantly upon the peak of Mount Everest, they accomplished what other climbers had striven for years to achieve. But their conquest of the world's highest summit has not ended man's battle against the mountains. Instead, it has raised the tempo of his attack.

For the past two years, high mountaineers have been storming the world's loftiest region, south-central Asia. Their objectives: more unclimbed mountains to test skill and endurance.

In 1954, a year after the British mountaineering team bested mighty Everest, Italians captured the world's second-highest peak—K2 (Mount Godwin Austen).

Third-highest Kanchenjunga fell last May to a British assault under Dr. Charles Evans, a member of the successful Everest expedition. The British climbers never really stood on the crest of Kanchenjunga. They stopped some five feet short of the summit out of respect for the Sikkimese people who believe their gods live there.

Makalu, a giant neighbor of Everest, was climbed by French mountaineers who managed to put every one of their 11 men on the peak—an extraordinary



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INTO THE DARK BLUE WONDER—Cosmic and Ultraviolet Rays Lurk in Paths of Flyers Who Aim at the Meteor-Filled Heights Where Only Unmanned Rockets Now Zoom

DAVID S. BOYER, NATIONAL GEOGRAPHIC STAFF

PICTURE OF HEALTH—With a Movie Camera and X-ray Tube (left), Air Force Medics Study Heart and Lung Reactions of a Pilot Bound Tightly by a Pressure Suit

Aviation Medicine Paves Way for Space Invasion

Even birds cannot fly 17 miles up. Yet one spring day last year a sleek silvery machine with knife-sharp wings shot bulletlike through the dark blue sky to 90,000 feet—far above the region of earth's life. Inside the machine was a living man.

Thus Major Arthur Murray, United States Air Force, flew the rocket-powered Bell X-1A higher than any human being has flown before. What's more, he lived to tell about it.

Without the help of aviation medicine, a new kind of medical specialty, Major Murray could not have gone even half that high and survived.

Unprotected, he would be two minutes from unconsciousness at 30,000 feet. At 50,000, he'd black out entirely in 11 to 17 seconds. An added 13,000 feet would make his blood boil. His tissue would bloat and burst.

Years of experiments by teams of doctors, astrophysicists, biologists, engineers, biochemists, and psychologists keep Major Murray—and American pilots like him—safe when they sail high in earth's sea of air.

With pressurized cockpits, plus air and oxygen flowing through masks, pilots can breathe thousands of feet up, where outside air is too thin. But sometimes they fly so high—10 miles or more—that air pressure in the

"I felt as if a mound of stone were crushing me down in the seat, bending me over the dual-control stick. A slight grayness stole across my vision, and, no matter how hard I tried, I could not move. Temporarily, I weighed 660 pounds, instead of my normal 165."

Pilots can multiply their weight one minute and be weightless the next. Zooming into a high sky arc, a pilot floats in his safety harness inches from his seat, entirely free of weight. Loose objects hang beside him in mid-air as centrifugal force throws him up and gravity pulls him down. It's like going over a high roller-coaster peak, but it sometimes lasts as long as 30 seconds for pilots.

Why are scientists concerned? Some pilots say that weightlessness makes them feel as if they're falling. Others report different sensations. Doctors wonder if the human body can gradually adapt to weightlessness. They need to find the answer in a hurry, for rocket engines are bringing space flight closer. Then long periods of weightlessness will be common.

Major Murray's record flight took him within striking distance of outer space. Though scientists say actual space travel is years of research away, aviation medicine someday will ride side by side with high-soaring spacemen.

PHYSICAL CHECKUP BY REMOTE CONTROL—Strapped to a Pilot, Instruments Transmit His Temperature, Brain Waves, Heart Action, and Breathing at 40,000 Feet

NATIONAL GEOGRAPHIC PHOTOGRAPHERS JOHN E. FLETCHER AND DONALD MC BAIN

cockpit cannot be maintained at a sufficient level. Then even the pilot's conventional oxygen mask won't keep lungs functioning normally.

But inventive aeromedics have come up with an answer for this, too. An automatic valve forces pure oxygen into the pilot's lungs. Breathing processes reverse. The flyer doesn't have to draw in breath; instead, his lungs must push it out.

When all these breath-giving safety measures fail—and they do when enemy bullets or mechanical breakdown cause loss of cabin pressure at a height of about nine miles—pilots rely on weird-looking "man from Mars" suits. Tubes around arms and legs inflate in a flash, grip the pilot like a girdle giving him outside pressure long enough to dive to low-altitude safety.

But making sure pilots get enough pressure and oxygen isn't all aeromedics have to worry about. They send rockets screeching into space where blue sky turns black. Instruments record space data more than 90 miles above the earth, then parachute homeward. They help scientists learn about primary cosmic rays—tiny nuclei that bombard earth from outer space, penetrate it as low as 70,000 feet. If rays strike tissue, their electrically charged path destroys cells. But more research is needed before medics can agree on cosmic-ray effects on pilots.

"G force" poses a more immediate problem. That's what airmen call increased gravity that sometimes makes pilots four or more times their own weight when they change direction at high speed. On a smaller scale, the same thing happens to you when quick turns in a car push you against the door. Sudden thrusts like this can make pilots black out or cause eye and brain hemorrhage.

Allan C. Fisher, Jr., *National Geographic Magazine* staff member, actually flew with a crack test pilot to get facts for his article, "Aviation Medicine on the Threshold of Space," in the August, 1955, Magazine. Here's the way he described the effect of G force:

GOING UP SO OTHERS CAN COME DOWN
These Two Air Force Officers Will Jump from a Gondola to Test Escape Equipment. Balloon's Name Honors *Explorer II* Which Set an Altitude Record in 1935 During an Ascent Sponsored by the National Geographic Society and Air Corps

NATIONAL GEOGRAPHIC PHOTOGRAPHER ROBERT F. SISSON

NATIONAL GEOGRAPHIC PHOTOGRAPHER KATHLEEN REVIS

UNDER THE GREENWOOD TREE—Tourists and Holidaymakers Pause to Rest Near an Old Survivor of the Sherwood Forest That Robin Hood Knew. This Tree Is Major Oak

Robin Hood's Ghost Finds a New Sherwood Forest

If Robin Hood and his merry band of outlaws should return to Sherwood Forest, their fabled haunt in England's Nottinghamshire, they would hardly recognize the place. Though still a region of shady glades and rustic walks, the deep woods are gone. Only hollow, gnarled remnants remain of once-magnificent trees among which Robin Hood, Little John, Allan-a-Dale, and jolly Friar Tuck roamed with longbow and stave.

Today, American red oaks, transplanted from northeastern United States, are filling the gaps in Sherwood's foliage. They grow faster than their English cousins and withstand better the smoke of near-by industry.

In its prime, the Sherwood area covered more than 100,000 acres, including heath, pasture, and wastelands as well as dense woods. The forest served as a royal hunting preserve protected by strict trespassing laws. Perhaps the Robin Hood legend grew up out of public sympathy for hungry yeomen who were caught shooting the king's deer.

The ghost of the sharpshooting archer must blanch whiter than ever at one of Sherwood's alterations. For the British Army has cleared space within the forest for maneuvers. Where the longbow's feathered shafts once sang true to split a willow wand, army tanks now grind and clatter in steel-hulled array.

National Geographic References: ***Magazine***—Sept., 1955, "Landmarks of Literary England" (school price 55¢)